IN THE CLAIMS:

1. (Previously Presented) A downhole electric motor having at least three phases and comprising a permanent magnet rotor and a stator bearing phase windings in slots in the stator, each phase winding incorporating a plurality of coils each extending through a respective pair of closed stator slots and surrounding a respective portion of the stator between said stator slots, and adjacent coils of different phases extending through opposite parts of a respective one of the stator slots.

2. (Previously Presented) A motor according to claim 1, wherein said adjacent coils are separated by a gap through which cooling fluid may be pumped to cool the coils.

3. (Currently Amended) A motor according to claim 2, wherein said adjacent coils are separated by a thermally conductive projection, with which the coils are held in thermal contact by virtue of the conforming shape of the slot, extending at least part of the way across the slot.

4. (Previously Presented) A motor according to claim 1, wherein the stator incorporates nine windings extending through nine slots and consisting of three windings for each phase.

5. (Previously Presented) A motor according to claim 1, wherein the stator incorporates twelve windings extending through twelve slots and consisting of four windings for each phase.

6-30. (Canceled)

31. (New) A motor according to claim 1, wherein each slot is shaped to conform substantially to the cross-section of the corresponding coils.

32. (New) A motor according to claim 1, wherein each of the coils comprises a

plurality of coil sections fitted together to form a generally rectangular cross-section.

33. (New) A motor according to claim 32, wherein each of the coil sections is encapsulated within a respective electrically insulating layer.

34. (New) A motor according to claim 1, wherein each of the coils is encapsulated within a respective electrically insulating layer.

35. (New) A motor according to claim 1, wherein the phase windings comprise preformed open ended conductive loops fitted within the stator slots and closed by subsequently applied conductive parts.

36. (New) A motor according to claim 1, wherein the phase windings comprise a first multiple-phase section and a second multiple-phase section and separate supply leads for supplying said first and second sections with electrical power from the surface.

37. (New) A motor according to claim 36, wherein the first and second sections comprise two sets of phase windings wound on a common stator such that the motor may be driven by supply of power to only one of the sections in the event of failure of power to the other section.

38. (New) A motor according to claim 36, wherein the first section comprises a first set of phase windings wound on a first motor stator and the second section comprises a second set of phase windings wound on a second motor stator, a common rotor or mechanically coupled rotors being provided adjacent the stators.

39. (New) An electric submersible pump incorporating a downhole electric motor according to any preceding claim.